

III. REMARKS

Status of the Claims

Applicant has cancelled claim 31, amended independent claims 43 and 45, and added new claims 50-52 to accentuate the novel features of the invention for which protection is sought in this application. Claims 2,3, 7-24, 27-30, 32 and 43-49 are submitted for further consideration. Claim 45 is amended to overcome the Examiner's objection.

The Examiner has rejected claims 27,28,31 and 45-47 under 35USC102(b) based on the reference, Ishige et al, EP 0 725 408, referred to herein as Ishige. Claims 29, 30, 32 and 49 are rejected under 35USC103(a) also on the basis of Ishige. Further the Examiner has rejected claims 2,3,7-21,24, 43 and 48 under 35USC103(a) based on the reference Tham, et al, U.S. Patent no. 6,049,702 in view of the cited reference Ishige. Applicant submits that the amendment of claims 43 and 45 meet these rejections and accordingly the remaining dependent claims also define patentable subject matter. The Examiner is respectfully requested to reconsider the rejections based on the amended claims and the remarks below.

The Invention

As described in new independent claims 43 and 45, the invention of this application is directed to an micromechanical tunable capacitor (claim 45) and an integrated inductor and a tunable capacitor (claim 43). As described in each of the independent claims, the capacitor has a moveable electrode which is flexible. In claim 43, the resonator is suspended and a dielectric insulating layer separates the electrodes from

galvanic contact. In addition an exterior portion of the substrate is removed from the area below the resonator and capacitor in claim 43 and the capacitor of claim 45. This configuration provides a reduction in parasitic capacitance, as described in the application on page 16 lines 14-21.

Discussion of the Cited References

The Examiner relies primarily on the disclosure of the reference Ishige. The disclosure of Ishige shows a variety of structures for a micromechanical variable capacitor constructed with semiconductor fabrication techniques. These structures may be operated with a low voltage by setting the distance between the moveable and driving electrodes with flexibility (see column 16, lines 16-24). The reference Ishige fails to disclose the construction of a space below the capacitor by the removal of the substrate in the vicinity of the capacitor. The Examiner's reliance on the description in Ishige at column 16, lines 9-11 is misplaced. The language does not suggest the removal of base 22, but merely the expansion of the distance L. Further the removal of the base 22 would have no effect on the substrate 3 or on parasitic capacitance. The space is formed external to the device and does not effect the gap between capacitor electrodes.

The Issue of Anticipation

As stated in a prior response, it is well settled that a claim is anticipated, "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (See CHISOLM, Federal Circuit Guide, Pg. 1221).

"...it must be shown that the reference contains all of the

elements of the claims apart from irrelevant or merely extraneous variations, and the elements are arranged in the same way to achieve the same result which is asserted to be an inventive function..." 454 U.S. 1129 (1981)

The elements of the claim and their function and purpose within the claim must be reviewed in a manner similar to an infringement analysis. If the device described in the cited reference would not infringe if it was later, it will not anticipate if the reference is earlier.

Applying this standard to the device of the reference Ishige, it is observed that there is no space provided below the capacitor as described in claim and 45. Accordingly there would be no infringement. This is also true of the remaining claims dependent from claim 45. The reference Ishige, therefore, does not support a rejection based on anticipation, as contended by the Examiner.

The Issue of Obviousness

The Examiner has rejected claim 29,30,32 and 49 under 35USC103(B) as obvious in view of Ishige. This issue is now moot in view of the content of amended claim 45. Since the disclosure of Ishige fails to disclose a space below the capacitor for the reduction of parasitic capacitance, as described in claim 45, it cannot support a rejection of the above dependent claims based on obviousness.

It therefore follows that, for the above reasons, Ishige also fails to support the rejection of claim 43 and its dependent claims 2,3,7-21,24,43,44, and 48 based on obviousness. The

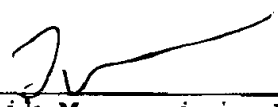
combined disclosures do not remedy the deficiencies in the cited reference Ishige.

SUMMARY

In view of the amendments to this application and the arguments stated above, Applicant submits that the claims under consideration contain patentable subject matter and favorable action by the Examiner is respectfully requested.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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4/14/03
Date

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